R E M A R K S

Claims 1-20 are pending. Claims 4 and 6 have been rejected and claims 1-3, 5 and 7-20 are withdrawn from consideration. Claims 4 and 6 have been amended herein. No new matter has been added by way of these amendments. For instance, claims 4 and 6 have been amended to remove the recitation of "partial." This is a non-narrowing amendment since it serves to simply clarify to the Examiner that SEQ ID NO:2 is 100% of the amino acid sequence that is encoded by the claimed nucleic acid. Accordingly, no new matter has been added.

In view of the following remarks Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Issue with Respect to Priority

The Examiner indicates that priority for the present claims is accorded that of the filing date of parent application 09/262,856, filed on March 4, 1999. However, the Examiner indicates that there is no support for an isolated nucleic acid in PCT/JP97/03041, filed August 29, 1997. Applicants respectfully disagree with the Examiner.

A review of the relevant publication corresponding to PCT/JP97/03041 reveals that sequences recited in the present calims are fully supported by the specification as originally filed in

PCT/JP97/03041. The Examiner is therefore requested to acknowledge Applicants claim of priority.

Issues Under 35 U.S.C. § 112, First Paragraph

The Examiner has rejected claims 4 and 6 under 35 U.S.C. §112, first paragraph, for the reasons recited at pages 3-5 of the outstanding Office Action. Applicants respectfully traverse.

The Examiner has provided a written description and enablement rejection. Applicants will address these rejections separately.

Written Description

The Examiner asserts that there is insufficient written description for the subject matter of claims 4 and 6. Applicants respectfully disagree. To emphasize the possession of 100% of the amino acid sequence of SEQ ID NO:2, Applicants have clarified the language of claims 4 and 6. Applicants point out that SEQ ID NO:2 is 100% of the amino acid sequence that is encoded by the claimed nucleic acid, rather than SEQ ID NO:2 being only a portion of the amino acid sequence that is encoded by the claimed nucleic acid.

Concerning the written description rejection, the Examiner has asserted that although the partial amino acid sequence according to SEQ ID NO:2 is disclosed, an isolated nucleic acid encoding such amino acid has not been identified or described. A review of the specification reveals that the amino acid sequence of SEQ ID NO:2

may be obtained by affinity chromatography (see page 34) or ion exchange chromatography (see page 35). Also, at pages 40-41 of the specification it is explained that the information of the amino acid sequence can be used to isolate a nucleic acid by PCR. The particular DNA encoding the amino acid sequence of SEQ ID NO:2 is not disclosed in the present specification, however, such disclosure is not necessary.

Based upon the language of claim 4 and claim 6, Applicants submit that possession of the amino acid sequence of SEQ ID NO:2 necessarily imparts possession of the nucleic acid encoding that partial sequence. The state of the art has developed such that the complete amino acid sequence of a protein puts one in possession of the genus of DNA sequences encoding such amino acid sequence. Thus, one of ordinary skill in the art, at the time the present application was filed, would have therefore been in possession of the entire genus of DNA sequences that can encode the disclosed protein sequence of SEQ ID NO:2, even if individual species within that genus might not have been described or rendered obvious. Cf. In re Deuel, 51 F.3d 1552 (Fed. Cir. 1995). A recent Federal Circuit decision of In re Wallach, 71 U.S.P.Q.2d 1939 at 1942 (Fed. Cir. 2004) also supports this rationale.

In Wallach, the inventors discovered two specific proteins isolated from human urine that selectively inhibit the cytotoxic effect of tumor necrosis factor ("TNF"). These proteins were named

TNF binding proteins I & II ("TBP-I" and "TBP-II"). After obtaining a partial amino acid sequence of the N-terminal portion of TBP-II and determining that the complete protein has a molecular weight of about 30 kilodaltons ("kDa") when measured by sodium dodecyl sulfate polyacrylamide gel electrophoresis ("SDS-PAGE") under reducing conditions, the inventors filed a patent application including claims directed to proteins having that molecular weight and a partial sequence and having the ability to inhibit the cytotoxic effect of TNF. Claims were also included to isolated DNA molecules that encode the claimed (complete) proteins.

The U.S.P.T.O. issued a restriction requirement and inventors filed divisional applications. The claims directed to the proteins having the stated partial sequence are currently involved in an interference proceeding, but are otherwise allowable. The claims at issue in Wallach were those directed to the DNA, and were rejected under § 112, first paragraph, written description.

The claim, in particular, at issue in Wallach, is as follows:

> 11. An isolated DNA molecule comprising a contiguous nucleotide sequence coding for a protein consisting of naturally occurring human Tumor Necrosis Factor (TNF) Binding Protein II, herein designated TBP-II, said TBP-II including the amino acid sequence: Thr-Pro-Tyr-Ala-Pro-Glu-Pro-Gly-Ser-Thr in the portion of the protein sequenced by N-terminal sequence analysis, said protein having the ability to inhibit the cytotoxic effect of TNF, wherein said naturally occurring TBP-II protein is the same as that protein having the ability to inhibit the cytotoxic effect of TNF which, after being purified by subjecting a crude protein

> recovered from a dialyzed concentrate of human urine to affinity chromatography on a column of immobilized TNF, elutes from a reversed-phase high pressure liquid chromatography column as a single peak in a fraction corresponding to about 31% acetonitrile and shows a molecular weight of about 30 kDa when measured by SDS-PAGE under reducing conditions.

The Federal Circuit found that there is no requirement for a patent applicant to list every possible permutation of the nucleic acid sequences that can encode a particular protein for which the amino acid sequence is disclosed, given the fact that it is a routine matter to convert back and forth between an amino acid sequence and the sequences of the nucleic acid molecules that can encode it. Wallach, at 1942.

However, the Federal Circuit found insufficient written description for claim 11 above noting that the applicants did not claim the nucleic acid molecules that encode the simple (partial) protein sequence that they disclosed. Rather, they claimed nucleic acids encoding a protein for which they provided only a partial sequence. It was conceded that as of the time of the decision, it was known that urinary TBP-II has a sequence of 185-192 amino acids. Thus, the court stated that without the approximately 95% of the amino acid sequence that Appellants did not disclose, they could not find the DNA molecules claimed in the application had sufficient written description. Wallach, at 1942-43.

However, the present facts differ from Wallach. In Wallach, the claim at issue related to an isolated DNA comprising a contiguous nucleotide sequence coding for a protein consisting of naturally occurring human TNF Binding Protein II. Thus, it is a full length DNA being claimed. The TBP-II (full length) is claimed as having a molecular weight of 30 kDa. However, in the present instance, claim 4 (and claim 6), although being directed to a DNA encoding a amino acid sequence, is not attempting to claim a DNA encoding a protein that is larger than SEQ ID NO:2. Rather, the DNA being claimed is only as much as corresponds to the amino acid sequence of SEQ ID NO:2 possessed by the present inventors. Further, the molecular weight of 25 kDa recited in claims 4 and 6 does not correspond to a full length protein (only a portion of which would represent SEQ ID NO:2), but only the partial sequence, which is the subject of the claims. Thus, in the present instance, it is evident that the "25 kDa" of the present claims is the molecular weight of the complete antigenic protein.

Accordingly, Applicants submit that Wallach supports Applicants assertion that claims 4 and 6 are fully supported by the present specification.

The Examiner further points out that the specification fails to disclose any of the representative species of *Candida*, (other than *Candida albicans*). Applicants traverse and submit that the

present claims are fully supported by the present specification. Reconsideration and withdrawal of this rejection are requested.

Enablement

Concerning the enablement rejection, the Examiner asserts that the specification fails to provide sufficient guidelines for one of skill in the art to practice the invention without undue experimentation. Applicants respectfully disagree with the Examiner.

The present specification explains that the information of the amino acid sequence (for instance, that of SEQ ID NO:2) can be used to prepare isolated nucleic acids by PCR. Additionally, it is explained (see pages 40-41) that a cDNA library can be prepared from cells expressing a desired antigenic protein. Next, the PCR is carried out with genomic DNA for the cells expressing the antigenic protein as a template, by using an oligonucleotide usable as a primer (which is designed based upon a nucleotide sequence) extrapolated from the amino acid sequence as well as a suitable primer pair. A DNA encoding the desired antigenic protein can then be selected from the cDNA library by hybridization using a DNA fragment obtained by this PCR. Further, a nucleic acid encoding the antigenic protein can be isolated by reverse transcriptase PCR as disclosed at pages 41-42.

Based upon this information, and the knowledge in the art, Applicants respectfully submit that those of skill in the art, without undue experimentation, would be able to make and use the presently claimed subject matter. Thus, this rejection is improper. Reconsideration and withdrawal thereof are respectfully requested.

Issues Under 35 U.S.C. §102(b)

The Examiner has rejected claims 1 and 4 under 35 U.S.C. §102(b) as being anticipated by Buckley et al., Infect Immun. 1982 September, 37(3): 1209-1217. Applicants respectfully traverse.

The Examiner asserts that the solubilized sample obtained from the Buckley reference contains an isolated nucleic acid which inherently encodes a fungal antigen having the present properties. Further, the Examiner asserts that such DNA would hybridize as recited in claim 6. Applicants respectfully disagree.

The nucleic acid disclosed in Buckley is prepared by precipitating a sample (a culture medium of *C. albicans*) with trichloracetic acid, extracting the precipitates obtained with an alkali, and solubilizing the residue with trichloracetic acid. In such simple treatments it is not possible to obtain an isolated nucleic acid in which polysaccharides and proteins contained in the cells are removed. In fact, there is no description in Buckley

that a nucleic acid (DNA) could be isolated by the above-mentioned method.

Also, the method of Buckley is directed to determining the amount of DNA by incorporating a labeling compound into the DNA. Therefore, if free labeling compounds not incorporated into DNA and labeling compounds incorporated into RNA are removed, the amount of DNA could be determined without any problem even if some polysaccharides and proteins remain in the sample. Thus, there would be no motivation to further isolate the DNA.

Further, the DNA described in Buckley is a mixture of a nucleic acid not encoding a fungal antigen as claimed in the present application, and a nucleic acid not capable of hybridizing to a nucleic acid encoding the fungal antigen as recited in the claim. Therefore, the DNA described in Buckley does not correspond to the "isolated nucleic acid" as recited in the present application.

In summary, Applicants submit that there exists no anticipation of claims 4 or 6 based upon Buckley. The Examiner is therefore requested to withdraw this rejection.

The Examiner has also rejected claims 4 and 6 under 35 U.S.C. § 102(a) as being anticipated by Rhei et al., Database GenEmbl. Accession number AF031478 (Biochim. Biophys. Acta 1426(3), 409-419 (1999)). Applicants respectfully traverse.

The Rhei reference is not prior art. Rhei published in 1999. However, this 1999 date is overcome by the earlier PCT filing date of PCT/JP97/03041 of August 29, 1997 according to the present invention. The Examiner is again requested to acknowledge the present applications' claim of priority (since the present claims are fully supported by PCT/JP97/03041). Accordingly, Rhei is not prior art. Reconsideration and withdrawal of this rejection are requested.

Lastly, the Examiner has rejected claims 4 and 6 under 35 U.S.C. § 102(e) as anticipated by Weinstock et al., USP 6,747,137. Applicants respectfully traverse.

The Weinstock reference is not prior art. As indicated above, Applicants submit that the August 29, 1997 PCT filing date to which the present application claims priority and in which the present claims are fully supported must be acknowledged by the Examiner. Therefore, Weinstock is not valid prior art since it was filed in the United States on February 12, 1999, which is after the present PCT priority date. Accordingly, Weinstock is not prior art. Reconsideration and withdrawal of this rejection are requested.

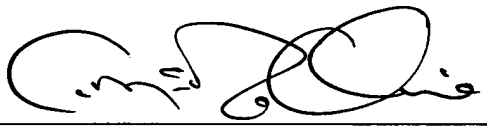
In summary, Applicants respectfully submit that the present claims define subject matter that is patentable over the cited art. Accordingly, the Examiner is respectfully requested to withdraw all rejections and allow the currently pending claims.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Craig A. McRobbie (Reg. No. 42,874) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP



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